

**MATRIX COMPARING STAFF'S DRAFT AGRICULTURAL ORDER TO THE
ALTERNATIVES SUBMITTED BY STAKEHOLDERS
AND
TABLE COMPARING THE AGRICULTURAL ALTERNATIVE PROPOSAL AND
STAFF'S DRAFT AGRICULTURAL ORDER
AND
UPDATE ON STATUS OF STAFF'S EFFORTS RELATED TO THE CO-
MANAGEMENT OF FOOD SAFETY AND WATER QUALITY ISSUES**

Prepared on July 6, 2011

As requested by the Water Board, Attachment 3 to the Addendum to the Staff Report (Addendum) includes a matrix that generally compares staff's Draft Agricultural Order to the various alternatives submitted by stakeholders (Table 1), a summary table specifically comparing the Agricultural Alternative Proposal and staff's Draft Agricultural Order (Table 2), and an update on the status of staff's efforts related to the co-management of food safety and water quality issues.

Matrix Comparison of All Alternatives and Draft Orders

Table 1 below is an updated version of the matrix used previously to generally compare alternatives and proposals submitted by stakeholder to the 2004 Conditional Waiver and 2011 Draft Agricultural Order (including revisions recommended in the Addendum). Staff added the Agricultural Proposal, as submitted on March 17 and May 4, 2011, and relative to the proposal's requirements that apply only to those who join third-party coalitions (shown as AG GROUP in the matrix). Each alternative, proposal or order appears in a cell in the table if the alternative, proposal or order addresses the component representing that cell. For example, all six of the alternatives, proposals or orders include some form of reporting or monitoring to confirm compliance with the requirement to "eliminate toxic discharges of agricultural pesticides to surface waters and groundwater" so their abbreviations (per the key at the bottom of Table 1) appear in the cell labeled "Confirmation of Compliance" on the same line that has "eliminate toxic discharges of agricultural pesticides to surface waters and groundwater" in the cell labeled "Legal Requirement." For another example, only the alternative submitted by Monterey Coastkeeper and other Environmental Organizations (ENV) and the 2011 Draft Agricultural Order (ORDER) include explicit dates by which dischargers must reduce nutrient discharges to groundwater to meet groundwater standards so their abbreviations appear in the cell labeled "Time to Compliance" on the same line that has "reduce nutrient discharges to groundwater to meet groundwater standards" in the cell labeled "Legal Requirement."

All the alternatives and proposals submitted by stakeholders, and the 2004 Conditional Waiver and the 2011 Draft Agricultural Order are available at:

http://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/ag_order.shtml

Table 1. General Comparison of All Alternatives

Comparison of All Alternatives¹ based on Agricultural Order Requirements²					
Authority	Legal Requirement	Confirmation of Compliance	Point of Compliance	Milestone(s) to Measure Progress	Time to Compliance
Porter-Cologne, Basin Plan	Eliminate toxic discharges of agricultural pesticides to surface waters and groundwater	FARM BUREAU AG GROUP OSR ENV 2011 ORDER 2004 WAIVER	FARM BUREAU ENV 2011 ORDER 2004 WAIVER	FARM BUREAU OSR ENV 2011 ORDER	FARM BUREAU OSR ENV 2011 ORDER
Porter-Cologne, Basin Plan	Reduce nutrient discharges to surface waters to meet nutrient standards	FARM BUREAU AG GROUP OSR ENV 2011 ORDER 2004 WAIVER	FARM BUREAU ENV 2011 ORDER 2004 WAIVER	FARM BUREAU OSR ENV 2011 ORDER	FARM BUREAU OSR ENV 2011 ORDER
Porter-Cologne, Basin Plan	Reduce nutrient discharges to groundwater to meet nitrate standards	FARM BUREAU ENV 2011 ORDER 2004 WAIVER	FARM BUREAU ENV 2011 ORDER	ENV 2011 ORDER	ENV 2011 ORDER
Porter-Cologne, Basin Plan	Minimize sediment discharges from agricultural lands	FARM BUREAU AG GROUP OSR ENV 2011 ORDER 2004 WAIVER	FARM BUREAU ENV 2011 ORDER 2004 WAIVER	FARM BUREAU OSR ENV 2011 ORDER	FARM BUREAU OSR ENV 2011 ORDER
Porter-Cologne, Basin Plan	Protect aquatic habitat	OSR ENV 2011 ORDER 2004 WAIVER	ENV 2011 ORDER	ENV 2011 ORDER	ENV 2011 ORDER

¹Alternatives:
FARM BUREAU = CA Farm Bureau Federation and other Ag Organizations, December 3, 2010 version
AG GROUP = Agricultural Industry representatives, March 17 and May 4, 2011, as for third-party groups or “coalitions”
OSR = OSR Enterprises, Inc.
ENV = Monterey Coastkeeper and other Environmental Organizations
2011 ORDER = 2011 Draft Agricultural Order
2004 WAIVER = Existing 2004 Conditional Waiver for Irrigated Agriculture
²Requirements established as framework for development of Draft Ag Order in December 2008

Comparison of the Agricultural Proposal and Draft Agricultural Order

Table 2 below is a detailed summary comparison of the Agricultural Proposal submitted by the Ag Group and staff's Draft Agricultural Order. A more narrative explanation of staff's evaluation of the Agricultural Proposal is included in the Addendum.

Table 2. Summary of Comparison of the Agricultural Industry Proposal Submitted by the Ag Group and Water Board Staff's Draft Agricultural Order

	Agricultural Industry Proposal	Water Board Staff's Draft Agricultural Order
Required Conditions	<p><u>For all dischargers:</u></p> <p>Implementation of management practices focused on pesticides, fertilizers and sediment.</p> <p><u>For dischargers who do not elect to participate in a third party group:</u></p> <p>Same requirements as the Agricultural Order but deleted several conditions to implement management practices to control waste discharges of pesticides, fertilizers and sediment (Conditions 32, 33, 35, 36, 38, and 43f. and 43.g. which require Farm Plans to include descriptions and status of management practices and methods to verify effectiveness of practices).</p> <p><u>For dischargers who elect to participate in a third party group:</u></p> <p>Implement management practices.</p> <p>Work with the third party group to identify the risk of their operation.</p> <p>Failure to pay fees voids opportunity to participate in a third party group.</p> <p><u>For third party group:</u></p> <p>Submittal of a Notice of Intent to be a third party group.</p> <p>Development and submittal of a General Report/Workplan that will</p>	<p><u>For all dischargers:</u></p> <p>Multiple conditions to implement management practices to control waste discharges of pesticides, fertilizers and sediment (Conditions 32, 33, 35, 36, 38, and 43f. and 43.g.).</p> <p><u>For Tier 2 and Tier 3 dischargers:</u></p> <p>Multiple conditions to indicate effectiveness of management practices or pollution load reduction (Conditions 67-71).</p> <p><u>For Tier 3 dischargers only:</u></p> <p>Multiple conditions to indicate effectiveness of management practices or pollution load reduction (Conditions 72-79).</p> <p>Demonstrate that waste discharges are effectively controlled per defined time schedules (Conditions 84-87).</p>

	Agricultural Industry Proposal	Water Board Staff's Draft Agricultural Order
	describe 1) how the group will determine the level of risk to water quality of participants, 2) how the group will conduct audits; and how the group will conduct an audit review process.	
Voluntary Conditions	<p><u>For all dischargers:</u></p> <p>Election to participate in third party group.</p> <p><u>For dischargers who elect to participate in a third party group:</u></p> <p>Requirements to implement management practices to control waste discharges that apply to all other dischargers.</p> <p>Monitoring effectiveness of management practices.</p> <p>Reporting farm level information to the Water Board.</p>	<p><u>For all dischargers:</u></p> <p>Selection of specific management practices to control waste discharges</p> <p>Selection of specific methods to evaluate effectiveness of management practices</p>
Monitoring and Reporting Information	<p><u>For all dischargers:</u></p> <p>Conduct surface water receiving water quality monitoring and reporting consistent with the Draft Agricultural Order.</p> <p>Elect either cooperative groundwater assessment, monitoring, and reporting, OR individual groundwater monitoring and reporting [for which no requirements are specified].</p> <p><u>For dischargers who do not elect to participate in a third party group:</u></p> <p>Conduct monitoring and reporting, consistent with the Draft Agricultural Order.</p> <p><u>For dischargers who elect to participate in a third party group:</u></p> <p>[No reporting; participate in undetermined audit process to generate aggregated information for General Report]</p> <p><u>For third party group:</u></p> <p>Submittal of General Report annually; report to include all participants, participants audited, areas where</p>	<p><u>For all dischargers:</u></p> <p>Conduct surface water receiving water quality monitoring and reporting.</p> <p>Conduct groundwater monitoring (two times in first year).</p> <p>Multiple conditions to track and measure effective control of waste discharges and/or pollution reduction (Conditions 67-79, and 84-87).</p>

	Agricultural Industry Proposal	Water Board Staff's Draft Agricultural Order
	audits conducted, results of the audit evaluations in aggregated format (currently unspecified; results may include numbers or percentage of operations implementing Farm Plans and management practices.)	

Status Update: Co-Management of Food Safety and Water Quality

Water Board staff members have been working with the Farm Food Safety and Conservation Network (FFSCN), a group made up of farmers, environmental groups, and regulatory agencies that work toward a common goal of promoting food safety and environmental stewardship. According to *Safe and Sustainable: Co-managing for Food Safety and Ecological Health in California's Central Coast Region (Safe and Sustainable)*, by Lowell et. al., 2010, co-management is defined as, *"an approach to minimize microbiological hazards associated with food production while simultaneously conserving soil, water, air, wildlife, and other natural resources."* Water Board staff support co-management and have coordinated with the Natural Resources Conservation Service (NRCS) to provide comments during the development of the co-management guide, *Food Safety Considerations for Conservation Planners: A Field Guide for Practitioners*, July 2009, Resource Conservation District of Monterey County. Staff referenced this guide in the Findings section of the Ag Order and encourages growers to utilize this guide when making conservation management decisions. This guide is available on the internet at www.rcdmonterey.org.

During the May Board meeting, members of the public stated that the Draft Agricultural Order is in conflict with the California Leafy Greens Marketing Act accepted food safety practices (LGMA metrics), and staff pointed out that it is not in conflict with the LGMA metrics. Water Board staff members have submitted many suggested changes to drafts and earlier versions of the LGMA metrics and many changes have been incorporated into the latest version, available online at <http://www.caleafygreens.ca.gov/food-safety-practices/downloads>. The LGMA metrics do not call for the removal of vegetation anywhere in the document. The LGMA metrics state, *"due to the close association between production blocks and environmentally sensitive areas in many locations, it is important to consult environmental regulators when any mitigation strategies that may impact these areas are employed. Growers should implement strategies that not only protect food safety but also support conservation practices, water quality, and habitat protection. All parties involved with implementing the practices outlined in this document should be aware that these metrics are not, in any way, meant to encourage growers to violate environmental regulations."* Furthermore, the LGMA metrics also state *"Fencing, vegetation removal, and destruction of habitat may result in adverse impacts to the environment. Potential adverse impacts include loss of habitat to beneficial insects and pollinators; wildlife loss; increased discharges of sediment and other pollutants resulting from the loss of vegetative filtering; and increased air quality impacts if bare soil is exposed to wind."* And the LGMA metrics specifically recommend that *"producers check for local, state, and federal laws and regulations that protect riparian habitat, restrict removal of vegetation or habitat, or restrict construction of wildlife deterrent fences in riparian areas or wildlife corridors."* Similar wording is incorporated into the Commodity

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Specific Food Safety Guidelines for green onions. The LGMA metrics also contain an appendix of permitting requirements and contacts for the appropriate environmental protection agencies, including the Water Board.

The recent Federal Food Safety Modernization Act (FSMA) passed in January 2011, requires the consideration of conservation and environmental practice standards established by the NRCS, wildlife conservation and environmental agencies. The FSMA also requires the use of science-based standards relating to animals in the growing area. As a result of this act, the FDA will be proposing food safety rules or guidance that will be in alignment with the FSMA.

The Draft Agricultural Order includes protection of existing aquatic habitat, including riparian and wetland areas. There is no conflict between food safety requirements and environmental protections, since the Order allows projects that follow environmental regulations and are permitted through a California Department of Fish and Game (CDFG) Streambed Alteration Agreement or Cal Fire Timber Harvest Plan. The proposed water quality buffer is not an additional buffer to existing riparian vegetation nor is it meant to be applied to all irrigated agricultural land. It is proposed to control discharges of waste by restoring water quality protection functions and by minimizing or preventing pollution loading into streams without riparian vegetation or where riparian vegetation was removed or is not adequately protecting water quality. Riparian vegetation also improves water quality and habitat through reduction of in-stream erosion, providing shade that reduces temperatures for fish, reducing harmful effects of high nutrients, and generally providing a healthier habitat.

The water quality buffer requirement in the Draft Agricultural Order is only proposed for a subset of Tier 3 growers that are adjacent to or contain a creek on the Clean Water Act 303(d) List of Impaired Waters as impaired for sediment, turbidity or temperature. As proposed, the water quality buffer requirement requires specific growers to submit a plan that includes establishing riparian vegetation from the top of the bank out 30 feet from a qualifying creek or propose an alternative that will protect water quality to an equivalent level. Staff evaluated the number of farms that would be in Tier 3 according to enrollment information operators submitted, and evaluated how many of those operations meet the "adjacent" criteria, and calculated that this requirement likely applies to less than 83 acres region-wide. Of course, not all of these creeks are currently stripped of vegetation or have a zero buffer; hopefully only a small fraction of creeks are barren of riparian vegetation and so less acreage would be affected by the water quality buffer requirement. The many benefits to water quality of riparian vegetation adjacent to streams are well documented within the literature and within the Draft Agricultural Order Staff Report.

While the proposed water quality buffer requirements do not conflict with the LGMA or any other agencies' requirements for protection of food safety and environmental practices, it is important to note that according to surveys by the Monterey County Resource Conservation District, many buyers or their third party auditors are demanding growers to implement bare dirt buffers and remove vegetation, even though the benefit to food quality is not documented, and in fact the removal of such vegetation may increase the risk to food safety by increasing the transport of harmful bacteria, and the practice creates other serious environmental consequences. These demands to remove vegetation are generally communicated by the buyers of produce and their auditors and

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are not made public. There is no scientific evidence that demonstrates that removal of vegetation will improve food safety, while there is a large body of literature that indicates the many benefits of vegetation, including sediment and chemical filtration, temperature control, increased nutrient uptake by plants and the reduction in transport of pathogenic bacteria.

According to the Safe and Sustainable article by Lowell (2010), *“the replacement of vegetated buffers with bare ground buffers can potentially increase both food safety risk and environmental damage. Growers have resoundingly stated their commitment to produce safe food, their desire to be excellent stewards of natural resources, and their belief that they can do both well – but only if food safety programs effectively integrate resource conservation goals.”* With the passage of the FSMA and the movement toward a National LGMA by the United States Department of Agriculture and Federal Food Safety Standards by the federal Department of Agriculture, Water Board staff anticipates that buyers and their auditors will have to demonstrate compliance with environmental regulations and rely on sound science when developing their requirements. Since riparian areas are under Water Board jurisdiction as it relates to the protection of water quality, buyer and/or auditor food safety demands or practices that lead to degraded water quality would conflict with our requirements. Water Board staff agrees with growers and scientists that there can be a safe food supply along with the protection of water quality and environmental practices.

Even though the Water Board has no regulatory authority over produce buyers in this matter, staff is leveraging its efforts to promote co-management through our involvement with the Farm Food Safety and Conservation Network (FFSCN). FFSCN regulatory, environmental, and agricultural entities are working hard to educate farmers, handlers, auditors, and buyers to the benefits of co-management. In response to Water Board staff's, FFSCN members' and other stakeholders' input during previous comment periods, the technical committee that will review the proposed audit metrics now includes representatives of the Natural Resources Conservation Service, EPA and FDA, according to the proposed NLGMA regulation as printed in the April 29, 2011 Federal Register. Members of the FFSCN have been involved in educational programs through Hartnell College that teach co-management concepts to growers and auditors within the region. FFSCN members are currently working with the Western Growers Association and Monterey County Growers Shippers to gather existing co-management curriculum to enhance training they give to growers and auditors of the California and Arizona LGMA. FFSCN members continue to comment on various federal agencies involved in food safety regulation that educating buyers and auditors to the benefits of co-management is necessary to a successful outcome.

California Department of Fish and Game is completing a two-year study to further the knowledge about the spatial and temporal incidence of E. coli O157:H7 and Salmonella in local wildlife. That data will provide more accurate information for growers, land-owners, processors, and auditors to make decisions that will balance habitat and wildlife management with food safety concerns. Other FFSCN members are working on presentations to give to the sustainability and food safety departments of appropriate produce buyers and have informed research priorities of research institutions such as the Center for Produce Safety to address co-management issues. The NRCS is sponsoring a grant that will develop a technical guide that will focus on co-management issues at the national level and conservation practices in general. Additionally, FFSCN

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members are providing training on co-management issues to California Food Emergency Response Team (CalFERT) members involved in the initial investigation of pathogen outbreaks in the growing fields. FFSCN is involved in a recent development, the Produce Safety Alliance GAPS program, composed of personnel from the USDA, FDA and various sub-committees and is coordinated by Cornell University. The goal of this program is to develop training and education to support the FSMA, and FFSCN members are focused on incorporating co-management goals. It is obvious through the above listed activities that the recognition of co-management has greatly increased since the 2006 outbreak of E. coli 0157:H7 in spinach. Through these various efforts, Water Board staff's goals are to leverage opportunities to effectively protect water quality while protecting public health and food safety.